



Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference PH-1748-PCT | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No. PCT/JP03/03528 | International filing date (<i>day/month/year</i>) 24 March 2003 (24.03.03) | Priority date (<i>day/month/year</i>) |
| International Patent Classification (IPC) or national classification and IPC G01N 21/27, 21/03 | | |
| Applicant HITACHI SOFTWARE ENGINEERING CO., LTD. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

| | |
|---|--|
| Date of submission of the demand 24 March 2003 (24.03.03) | Date of completion of this report 30 September 2003 (30.09.2003) |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP03/03528

I. Basis of the report

1. With regard to the elements of the international application:^{*}

- the international application as originally filed
 the description:

pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

- the claims:

pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19)
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

- the drawings:

pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

- the sequence listing part of the description:

pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
 the language of publication of the international application (under Rule 48.3(b)).
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority in written form.
 furnished subsequently to this Authority in computer readable form.
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages _____
 the claims, Nos. _____
 the drawings, sheets/fig. _____

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- restricted the claims.
- paid additional fees.
- paid additional fees under protest.
- neither restricted nor paid additional fees.

2. This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- complied with.
- not complied with for the following reasons:

Claims 1-12 are inventions pertaining to a reading device and method wherein images are taken simultaneously of a plurality of wells and the absorbance of each well is analyzed.

On the other hand, claims 13-15 pertains to the structure of a microchamber array used for ordinary absorbance reading including devices and methods other those of claims 1-12.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- all parts.
- the parts relating to claims Nos. _____

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

| | | | |
|-------------------------------|--------|----------------|-----|
| Novelty (N) | Claims | 3, 5-12 | YES |
| | Claims | 1, 2, 4, 13-15 | NO |
| Inventive step (IS) | Claims | 9 | YES |
| | Claims | 1-8, 10-15 | NO |
| Industrial applicability (IA) | Claims | 1-15 | YES |
| | Claims | | NO |

2. Citations and explanations

Document 1: JP, 2002-510036, A (AVENTIS PHARMA DEUTSCHLAND GMBH.) &WO, 99/49973, A

Document 2: JP, 2001-512875, A (IMAGING RESEARCH, INC.) &WO, 99/08233, A

Document 3: JP, 2002-525600, A (CELLOMICS, INC.) &WO, 00/17624, A

Document 4: JP, 61-262639, A (OLYMPUS OPTICAL COMPANY LIMITED)

Document 5: JP, 8-304177, A (HIOKI E.E. CORPORATION)

Document 6: JP, 6-323990, A (KYOTO ELECTRONICS MANUFACTURING CO., LTD.)

Document 7: JP, 47-45894, A (BODENSEEWERK PERKIN-ELMER & CO., GMBH.)

Document 8: JP, 1-307645, A (DAINIPPON PRINTING CO., LTD.)

Document 9: JP, 5-302893, A (SHIMADZU CORPORATION)

Document 10: JP, 2001-108525, A (SHIMADZU CORPORATION)

Document 11: JP, 8-193945, A (SHIMADZU CORPORATION)

Claims 13-15 – Documents 1, 3

Document 1 describes making the diameter of one well in a microchamber array 1 mm, the distance between well centers 2.25 mm (equivalent to the distance between wells 1.25 mm), and the number of wells 1000 to 4000 (paragraphs 6 and 10).

Document 3 describes making the well size in a microchamber array 0.02 to 2 mm, the distance between wells 0.125 to 3 mm, and the number of wells 20 to 6400 per square centimeter (paragraphs 152-169).

The numerical value ranges specified in the claims are included in the numerical value ranges of the aforesaid documents or are close thereto, so the subject matter of these claims is not novel.

Claims 1, 2, 4 – Document 2

Document 2 describes a simultaneous imaging means consisting of a light source, wavelength selection means, uniform illumination means (p. 19 (paragraph 42)), telecentric optical system for receiving light, and an imaging camera as a measurement optical system that can be used in common for transmission, fluorescence, and optical emission spectrometry (paragraph 41) with regard to a microchamber array. This uses simultaneous imaging, so if a well is included in the imaging means field of view, imaging is completed in a short time, and obviously it is possible to do so "within one minute." Therefore the subject matter of these claims is not novel.

Claims 3, 11 – Documents 1-3

Paragraph 137 of document 3 describes providing a microchamber array with a fluid recovery mechanism.

Claim 5 – Documents 1-4

Document 4 pertains to absorbance measurement in a multichamber array, and from the lower right column on page 4 through the lower left column on page 5, describes enabling programming so that switching can be made appropriately among such measurement modes as a measurement mode that performs sequential wavelength scanning of each chamber and a measurement mode that performs continuous analysis of the same one item (meaning that it performs time series measurement at a single wavelength).

Claim 6 – Documents 1-3, 5, 6, 10, 11

Documents 5 and 6 describe a well-known detection technology for manually or automatically regulating the exposure time in an optical analysis device. Documents 9 and 10 describe a well-known detection technology for regulating the wavelength resolution or measurement wavelength range in a spectrometric analysis device. The items specified in these claims are well-known techniques and applying them would be easy for a person skilled in the art.

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International application No.

PCT/JP03/03528**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box V:**Claims 7, 8, 12 – Documents 1-3, 5-7, 10, 11**

When performing simultaneous imaging and analysis of a multichamber array, providing a light path for reference at one corner of the chamber array and processing data so that the absorbance of an unknown sample is corrected using the reference light path's transmittance measurement value is described in document 7. Furthermore, whether to form the reference light path in a reference chamber or as a light path for the light source light monitor is merely something to be appropriately selected according to the correction application.

Claim 10 – Documents 1-3, 5-7, 9, 10, 11

Correcting the light path length for a cell in an absorption spectrochemical analysis device is described in document 9 and is a well-known technique.